

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>FP014.0/PCT</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/NO2004/000396</b>	International filing date (day/month/year) <b>21/12/2004</b>	(Earliest) Priority Date (day/month/year) <b>22/12/2003</b>
Applicant <b>BADARNEH, Ziad</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1a, 25b

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/N02004/000396

## Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-44

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

## 1. claims: 1-44

- A) An apparatus (suitable for physical exercise or training and with means which provide for a plurality of different workout options simulating human physical movements,)
- B) an apparatus frame,
- C) a crank device mounted thereon, said crank device utilising cardanic motion
- D) a pair of crankarms each comprised of at least two parts, a first part being an inner crank arm and a second part being an outer crank arm, an inner crank arm axle to which said inner crank arm is rotationally attached,
- E) a first gear forming a sun gear through which said inner crank arm axle rotatably extends, said first gear being fixedly attached to a crank device frame,
- F) a second gear rotatably attached to an outer end of the inner crank arm, said outer crank arm at one end fixedly attached to said second gear and at the other end carrying a foot support,
- G) said first and seconds gears having a transmission ratio of 2:1,
- H) means connecting the first and second gears to enable the second gear to revolve around or along the first gear when human force leg force is applied to said foot support,
- I) a flywheel with or linked to movement braking means,
- J) a pair of handles stationary linked to the frame or movably linked to rotational movement means on the crank device to cause reciprocal movement of the handles;
- K) a first distance defined to be between a foot support attachment location on the outer crank arm and a centre of the second gear being equal to or larger than a second distance defined to be between the centre of the second gear and inner crank axle or centre of the first gear.

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## 2. claim: 45

- L) A foot support (suitable for use with a stationary apparatus for physical exercise, said apparatus having a crank device with outer crank arms) ,
- M) wherein the foot support in one operational position is non-tiltable sideways (relative to its crank caused direction of movement,)
- N) and wherein the foot support in a second operational position is tiltable sideways (relative to its crank caused direction of movement).

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## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## 3. claim: 46

L) A foot support (suitable for use with an a stationary apparatus for physical exercise, said apparatus having a crank device with outer crank arms,) O) wherein the foot support is a foot supporting platform (interactive with posture control means in said crank device to retain the foot support in an unchanged posture, e.g. horizontal, throughout an entire path cycle of the foot support.)

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## 4. claims: 47-69

C) A crank device (suitable for use with an apparatus for physical exercise, said crank device connectable to foot supports for a user in order to drive the crank device), D) a pair of crank arms each comprised of at least two parts, a first part being an inner crank arm and a second part being an outer crank arm, an inner crank arm axle to which said inner crank arm is rotationally attached, E) a first gear forming a sun gear through which said inner crank arm axle rotatably extends, said first gear being fixedly attached to a crank device frame, F) a second gear rotatably attached to an outer end of the inner crank, said outer crank arm at one end fixedly attached to said second gear and at the other end carrying said foot support, G) said first and seconds gears having a transmission ratio of 2: 1, H) means connecting the first and second gears to enable the second gear to revolve around or along the first gear when human force leg force is applied to said foot support, K) wherein a first distance defined to be between a foot support attachment point on the outer crank arm and a centre of the second gear is equal to or larger than a second distance defined to be between the centre of the second gear and inner crank axle or centre of the first gear.

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## 5. claims: 70-83

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

C) A crank device (suitable for use with an apparatus for physical exercise,)  
said crank device connectable to foot supports for a user in order to drive the crank device, D) a pair of crank arms each comprised of at least two parts, a first part being an inner crank arm and a second part being an outer crank arm, an inner crank arm axle to which said inner crank arm is rotationally attached,  
E) a first gear forming a sun gear through which said inner crank arm axle rotatably extends, said first gear being fixedly attached to a crank device frame,  
F) a second gear rotatably attached to an outer end of the inner crank arm, said outer crank arm at one end fixedly attached to said second gear and at the other end carrying said foot support,  
G) said first and second gears having a transmission ratio of 2: 1,  
H) means connecting the first and second gears to enable the second gear to revolve around or along the first gear (when human force leg force is applied to said foot support),  
P) wherein the outer crank arm has means for stabilising posture of a foot support relative to the frame throughout a full cycle of a path followed by said foot support,  
Q) said stabilising means comprising: a set of pulleys or gears rotationally attached to the outer arm, and linked with the inner crank arm for transferring a 1:2 motion ratio to the foot support to maintain said stabilised posture, and movement transferring means between said pulleys or gears.

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/N02004/000396

## A. CLASSIFICATION OF SUBJECT MATTER

B62M3/06 A63B22/06 A63B23/04 B62M3/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B62M A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/03727 A (SEGASBY, MARK) 28 January 1999 (1999-01-28)	1,3,5,7, 22-32, 39-44
Y	the whole document	2
Y	EP 0 761 528 A (MATSUURA, HIROMU) 12 March 1997 (1997-03-12) abstract; figures 2-13	2
A	DE 33 46 139 A1 (BACKERS, HEINZ-CHRISTIAN) 18 July 1985 (1985-07-18) page 13, line 28 - page 19, line 20; figures 1-4	1
A	US 5 419 572 A (STILLER ET AL) 30 May 1995 (1995-05-30) abstract; figures 1-10	1
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the international search

4 October 2005

Date of mailing of the international search report

23 -01- 2006

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/N02004/000396

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9903727	A	28-01-1999	AU 8233298 A EP 0994802 A1 JP 2001510267 T US 6334836 B1	10-02-1999 26-04-2000 31-07-2001 01-01-2002
EP 0761528	A	12-03-1997	CA 2183708 A1 KR 190219 B1	06-03-1997 01-06-1999
DE 3346139	A1	18-07-1985	NONE	
US 5419572	A	30-05-1995	NONE	
JP 2003011878	A	15-01-2003	NONE	

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/N02004/000396

## C:(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATENT ABSTRACTS OF JAPAN vol. 2003, no. 05, 12 May 2003 (2003-05-12) &amp; JP 2003 011878 A (TSUKISHIRO HIDEO), 15 January 2003 (2003-01-15) abstract</p> <p>-----</p>	1